



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/607,703

06/27/2003

Karl R. Amundson

INK-110

7924

21323

7590

05/20/2004

TESTA, HURWITZ & THIBEAULT, LLP  
HIGH STREET TOWER  
125 HIGH STREET  
BOSTON, MA 02110

EXAMINER

HASAN, MOHAMMED A

ART UNIT

PAPER NUMBER

2873

DATE MAILED: 05/20/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application N .

10/607,703

Applicant(s)

AMUNDSON, KARL R.

Examin r

Mohammed Hasan

Art Unit

2873

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1 - 46 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 25 - 46 is/are allowed.
- 6) ☒ Claim(s) 1 - 4, 5, 6, 8, 9, 16, 17 is/are rejected.
- 7) ☒ Claim(s) 7, 10 - 15, 18 - 24 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 June 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Oath/Declaration***

1. Oath and declaration filed on 6/27/2003 is accepted.

### ***Drawings***

2. The drawings are objected to because figure 1 does not show element 1 labeling (i.e., non emissive electronic display). A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 4, 5, 8, and 9 are rejected under 35 U.S.C. 102 (b) as being anticipated by Sheridan (4,126,854).

Regarding claim 1, Sheridan discloses (refer to figure 2) an electronic display comprising: a nonemissive electro-optic display medium and a light transmissive element having a first surface (i.e. first substrate 6 having first surface which is optically transparent), the first surface adjacent the nonemissive electro - optic display medium (4) wherein the propagation of light directed through the light transmissive element towards the nonemissive electro-optic display medium is substantially undeflected at the interface between the first surface and the nonemissive electro-optic display medium ( column 3, lines 19 – 46 ).

Regarding claim 4, Sheridan discloses (refer to figure 2A) the microencapsulated electrophoretic display medium (4) comprises at least one capsule dispersed in a binder phase, the at least one capsule containing an electrophoretic contrast medium phase includes at least one particle (14) and suspending fluid (18) (column 3, lines 66 – 68, column 4, lines 1- 10).

Regarding claim 5, Sheridan teaches, electrical conductors 10' ( column 3, line 25).

Regarding claim 8, Sheridan discloses (refer to figure 2) the first surface of the light transmissive element is substantially planar (i.e. first substrate 6 having first surface which is substantially planar).

Regarding claim 9, Sheridan discloses (refer to figure 2) the first surface of the light transmissive element (i.e. first substrate 6 having first surface which is optically transparent) is substantially void of surface elements (column 3, lines 19 – 34).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 16 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sheridan (4,126,854) in view of Sheridan (5,917,646).

Regarding claim 16 as applied to claim 1 and claim 17 as applied to claim 16, Sheridan ('854) discloses all of the claimed limitations except a light source. However, Sheridan ('646) discloses a light source (L) (column 5, lines 11 – 14).

It would have been obvious to one of ordinary skill in the art the time the invention was made to add a light source in to the Sheridan ('854) twisting ball panel display for the purpose of transmit or obscure the passage of light through it in an image wise manner as taught by Sheridan ('646) (column 4, lines 26 – 27).

Claims 2, 3, 6, and 17, are rejected under 35 U.S.C. 103(a) as being unpatentable over Sheridan (4,126,854) in view of Sheridan (5,917,646) and further view of Gates et al (US 2003/0076573 A1).

Regarding claims 2, 3 as applied to claim 1, claim 6 as applied to claim 5, and claim 17 as applied to claim 16, Sheridan ('854) and Sheridan ('646) discloses all of the claim limitations except the nonemissive electro-optic display medium is selected from the group consisting of: an electrochromic display medium, a microcell electrophoretic

display medium, and a rotating bichromal member and display medium comprises a microencapsulated electrophoretic display medium and electrically conductive coating comprises indium tin oxide and the light source is selected from the group consisting of a cold cathode fluorescent lamp, an SMT incandescent lamp, and a light emitting diode. However, Gates et al discloses display media include microencapsulated electro-optic displays, electrochromic displays, rotating bichromal ball displays (paragraph 0008) and electrodes formed from indium tin oxide (paragraph 0010) and a light emitting diode (paragraph 0145).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a rotating bichromal member, a microencapsulated member and electrodes with indium tin oxide and a light emitting diode in to the sheridon ('854) a display system for the purpose of improve the life and power efficiency of emissive displays as taught by Gates (paragraph 0006).

***Allowable Subject Matter***

5. Claims 25 – 46 are allowed.
6. The following is an examiner's statement of reasons for allowance: The prior art taken either singularly or in a combination fails to anticipate or fairly suggest the limitations of the independent claims, in such a manner that a rejection under 35 U.S.C. 102 or 103 would be proper. The prior art fails to teach a combination of all the claimed

Art Unit: 2873

features as presented in independent claim 25, for example which include a nonemissive electro – optic display medium and a reflector for directing from the light source through the light transmissive element and the reflector substantially uniform illumination of the nonemissive electro-optic display medium.

7. Claims 7, 10 – 15, 18 - 24 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter: The prior art fails to show the light transmissive element comprises an electrically conductive coating and a binder phase having a first index of refraction and the light transmissive element having second index of refraction, the second index of refraction being substantially equal to the first index of refraction and the light transmissive element having a second surface and the second surface comprising a reflective coating for internal reflection of light towards the nonemissive electro-optic display medium and the substrate comprises an electrically coating at the interface with the nonemissive electro-optic display medium, and a reflector for directing light from the light source the light transmissive element and the light source is coupled to a photodetector and the light source is activated when the level of ambient light drops below a predetermined value.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The closest prior art

Crowley (5,808,783) discloses high reflectance gyricon display.

Engler et al (6,480,322) discloses method of improving the respondability of moveable structure in a display.

Jacobson et al (5,930,026) discloses nonemissive display and piezoelectric power supplies therefor.

### ***Conclusion***

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mohammed Hasan whose telephone number is (571) 272-2331. The examiner can normally be reached on M-TH, 7:00 AM to 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps can be reached on (571) 272- 2328. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

MH  
May 8, 2004

  
Georgia Epps  
Supervisory Patent Examiner  
Technology Center 2800